DATA LOGGER BASICS FOR VFC PROVIDERS

MONTANA IMMUNIZATION PROGRAM
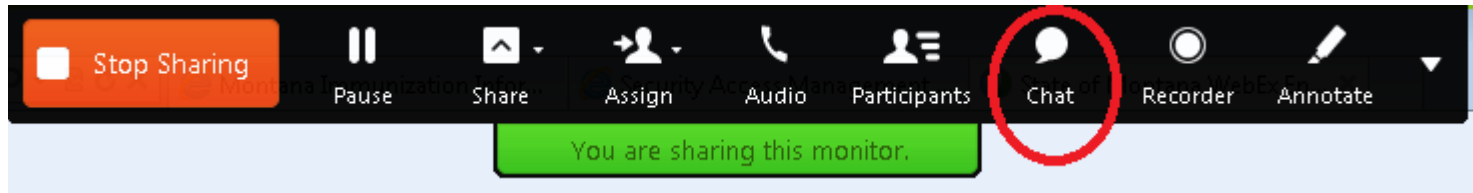
MONTANA DPHHS

Healthy People. Healthy Communities.

Department of Public Health & Human Services

VFC

vaccines for children

Use the "Call Me" Feature

📞 Call Me
The meeting will call you.

Meeting Password: **montana**
Audio Access Code: **801 773 470**

1

Webinar House Keeping

We mute all participants upon entering the presentation

Use the "Chat" feature during the presentation for questions.

We will unmute lines at the end for questions.

This presentation will be posted to www.immunization.mt.gov under the VFC Training and Resource Page.
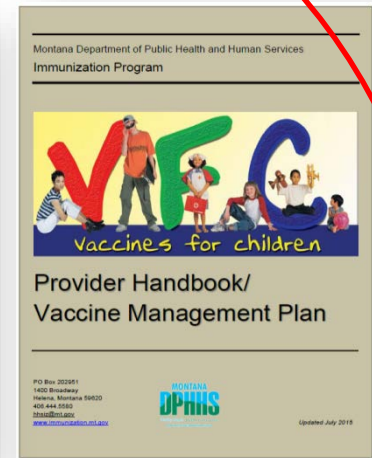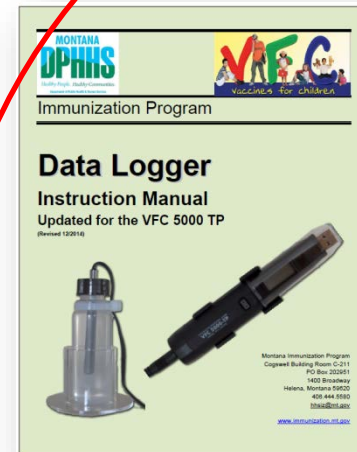
Let's get started!!

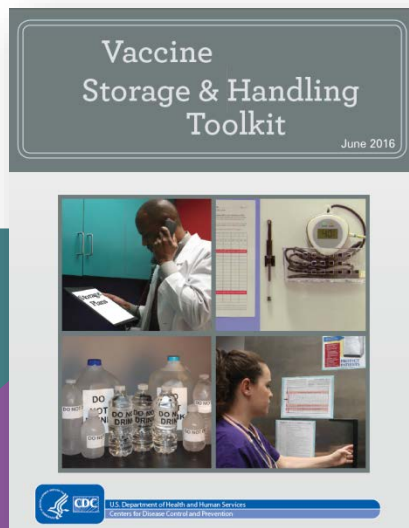# VACCINE STORAGE AND HANDLING RESOURCES

Montana VFC Program:

- *VFC Provider Handbook* – Sections 13 and 14
- *Data Logger Instruction Manual* (VFC5000-TC)
- Paper Temperature Logs

www.immunization.mt.gov   "Vaccines for Children"

CDC *Vaccine Storage and Handling Toolkit:*

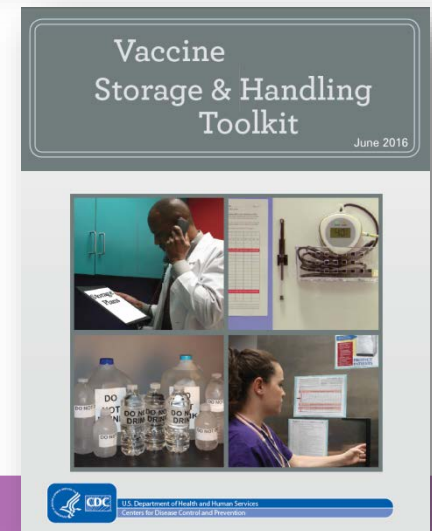# WHY MONITOR TEMPERATURES?

Vaccines are expensive and fragile.

Cold Chain – Documentation of proper temperature storage
- Manufacture >>> Administration
- Immunization providers are the last link in the chain.

Approved Standard of Care - Temperature monitoring is part of the approved standard of care for all public and private immunization providers – *CDC Vaccine Storage and Handling Toolkit*

VFC Providers are expected to follow the approved standard of care for immunizations.

4

WHAT DO YOU NEED TO MONITOR TEMPERATURES?

Appropriate vaccine storage units:

- CDC and Montana VFC Policy:
  - No dormitory-style units
  - No using the freezer in a combination refrigerator/freezer unless it is pharmaceutical grade with separate compressors.

  - New or replacement units must comply with CDC recommendations:
    - 1) Pharmaceutical-grade stand-alone or combination units
    - 2) Household/commercial stand-alone units
    - 3) Household/commercial combination units using only the refrigerator section.

OR

5

WHAT DO YOU NEED TO MONITOR TEMPERATURES?

CDC-compliant thermometer

- Be continuous recording devices that take readings at least every 30 minutes
- Read temperatures from a buffered probe
- Generate data that is reviewable, archivable, and able to be sent to the Immunization Program for review
- Alarm to indicate temperatures outside proper vaccine storage parameters
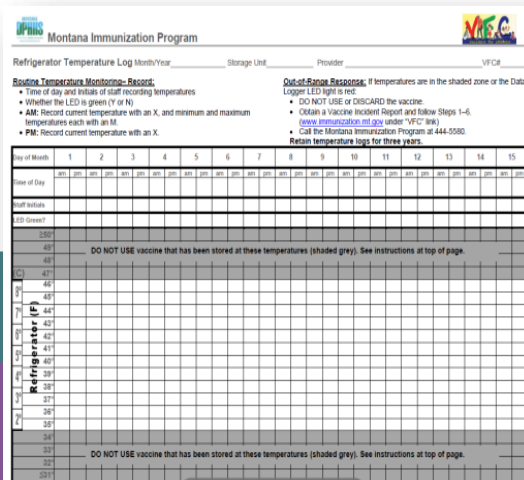- Have a current certificate of calibration testing

VFC5000 TP – Montana VFC providers are required to use this device unless they have an approved exemption.
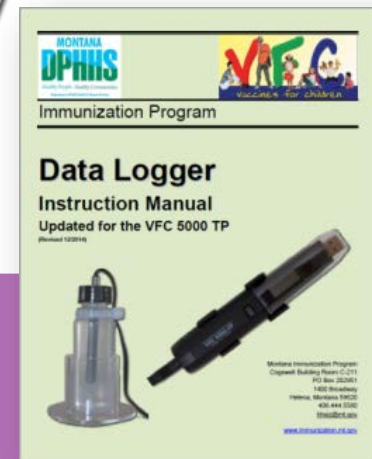
WHAT DO YOU NEED TO MONITOR TEMPERATURES?

Montana Immunization Program - Paper Temperature Logs:

- www.immunization.mt.gov Vaccines for Children link
- Separate form for refrigerator and freezer
- Instructions for routine temperature monitoring and out-of-range response
- Page 3 is a "Trouble-shooting log"
  - Used to input data into imMTrax "Cold Chain" module

WHAT DO YOU NEED TO MONITOR TEMPERATURES?

ONLINE - Vaccine Incident Report (VIR):

- To report temperature excursions, submit data, and request data logger help.
- Instructions are on the form.
- Field for uploading data files.
- Sends an email to the Immunization Program.
- Email or phone response.
- Bookmark for future reference.

WUFOO

Vaccine Incident Report – MT Immunization Program

Please complete this form to request data logger, vaccine storage unit, or temperature excursion support from the Montana Immunization Program.

If your public vaccine has experienced inappropriate storage conditions, please do the following:

1. Do not use or discard the affected vaccine.

3. Quarantine the affected vaccine and post a clear "Do Not Use" sign. ("Bag and Tag")

2. Contact your VFC Vaccine Manager or Alternate (if primary is unavailable).

4. If the situation is temporary or remedied within 1.5 hours, keep the vaccine in its original storage unit with the door closed. Monitor Data Loggers closely and take action if temperatures go out of range (See #5).

5. If necessary, move the vaccine to an alternate storage location that holds proper temperatures and has temperature monitoring capability. Record the time you removed the vaccine.

6. Download data logger data. If necessary, reset and reinstall data loggers so that the storage unit with vaccine continues to be monitored.

7. Complete and submit this form. Attach data logger files, if applicable. We will contact you shortly.

Questions? hhsiz@mt.gov 444-5580

Facility Name and VFC PIN *

Your Name *

First   Last

Email *

Phone Number *

####

WHAT DO YOU NEED TO MONITOR TEMPERATURES?

Trained, competent staff:

Vaccine manager and alternate manager are the experts:

- Set-up, download, read data, trouble-shoot, submit Vaccine Incident Reports, and send data
- Train and supervise staff involved in temperature monitoring
- Review paper temperature logs

All staff involved in temperature monitoring should be able to:

- Check and log twice daily readings
- Know when and how to respond to out-of-range indications

### New Vaccine Managers and Alternate Vaccine Managers must:

- Notify the Immunization Program
- Complete the Provider Education Requirement
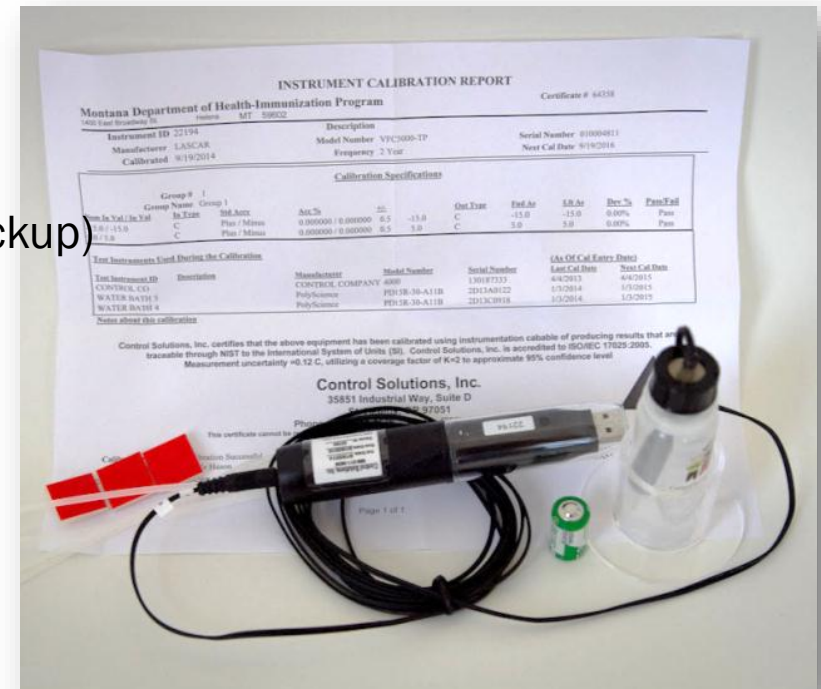
DATA LOGGERS

What's in the package?

- *Data Logger Instruction Manual*
- Best Practices Posters
- Paper Temperature Logs
- Data Loggers (enough for your public vaccine storage units – refrigerators and freezers.)
- One Backup Data Logger (NOT activated, battery removed)
- Cradles (if applicable)
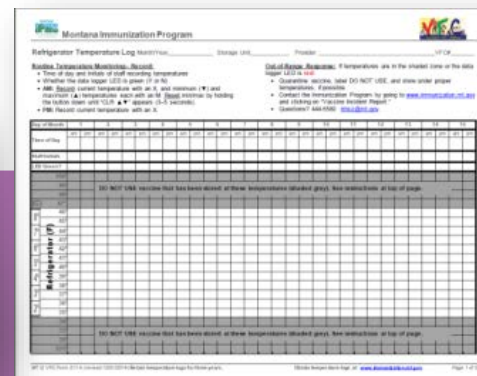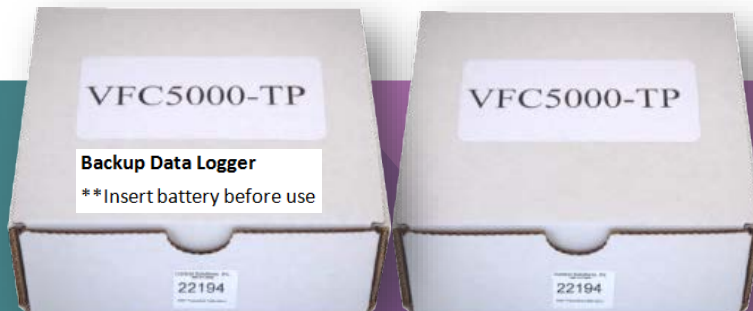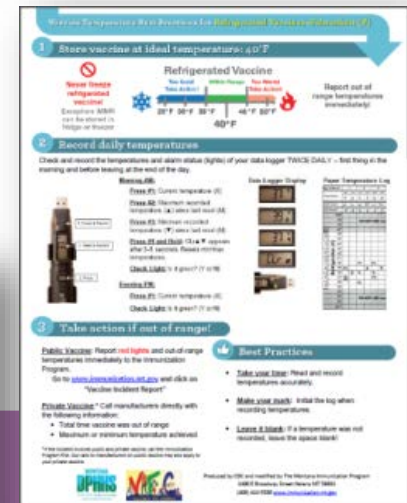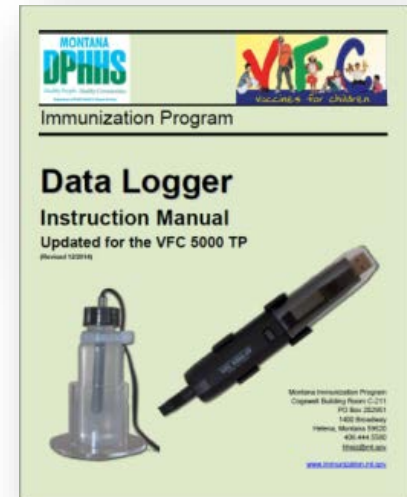
DATA LOGGERS

What's in the box?

- Data Logger (battery installed, activated for either ref or freezer unless backup)
- Calibration Certificate
- Plastic glycol-filled vial with probe, 10ft. wire, and radio jack
- Acrylic vial stand
- Ties and sticky squares
- Extra battery

- Save original box with certification and spare parts.
  Store in a well-marked, well-communicated place along with Backup Data Logger.
- Keep data logger and probe together (matching numbers on probe wire and data logger).

11

DATA LOGGERS

What's <u>not</u> in the box?

- **Software:**

  EasyLog Version 7.0 (or higher)
  Download from Internet – FREE!!!
  (www.immunization.mt.gov under "VFC")

  Make sure everyone involved in temperature monitoring can access EasyLog software and data files.

DATA LOGGERS

PROPER VACCINE PLACEMENT
(SECTION 13 OF *VFC PROVIDER HANDBOOK*)

- Keep in original boxes.

- Leave air spaces between boxes.

- Keep <u>vaccine and data logger probe</u> away from ceiling, floor, walls, vents, fans, and coils.

- DO NOT store vaccines in a closed, "non-breathable" container.

- DO NOT store vaccine in doors or crisper drawers. Instead, fill with water bottles.

- If using a combo refrigerator/freezer, keep <u>vaccine and data logger probe</u> away from air vent from the freezer.

DATA LOGGERS

INSTALLING THE THERMO-COUPLE PROBE
(SECTION 4 DATA LOGGER INSTRUCTION MANUAL)

- Centrally locate with vaccine.
- Keep <u>data logger probe</u> away from ceiling, floor, walls, vents, fans, and coils.
- Run wire along shelf edge and out hinge-side of door. Stabilize probe vial and wire with plastic ties and sticky squares (or tape).
- Attach cradle so probe wire can easily reach the back of the data logger. Wire must stay firmly seated in the device.
- Tidy-up excess wire so it is not bumped, pulled, or jostled.
- <u>Equilibrate probe for 1–2 hours before attaching data logger.</u>
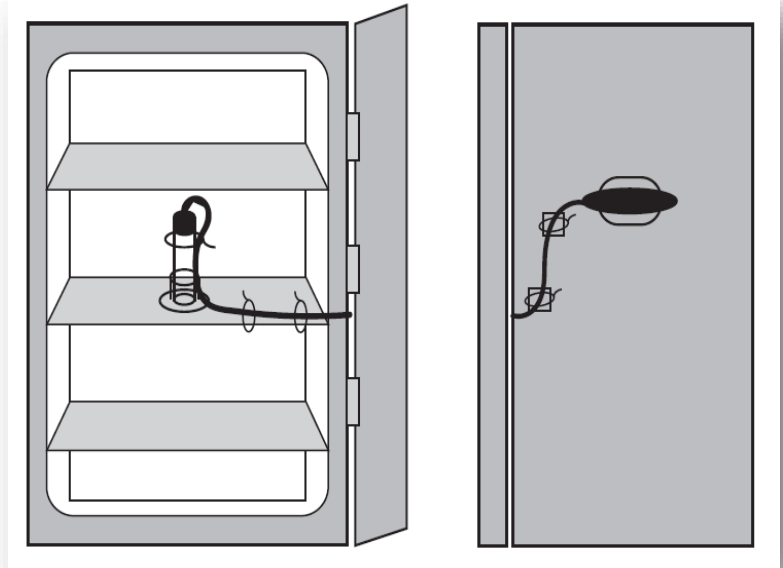
- Helpful Tips:
  - Attach temporarily at first with tape and twist ties. Then secure with sticky squares and plastic ties.
  - Glass shelves? Use tape.
  - Is door reversible?
  - Secure the vial stand in place with tape.

14

COMBINATION REFRIGERATOR/FREEZERS AND DATA LOGGERS

Vent channeling air in from the freezer.

No Vaccine
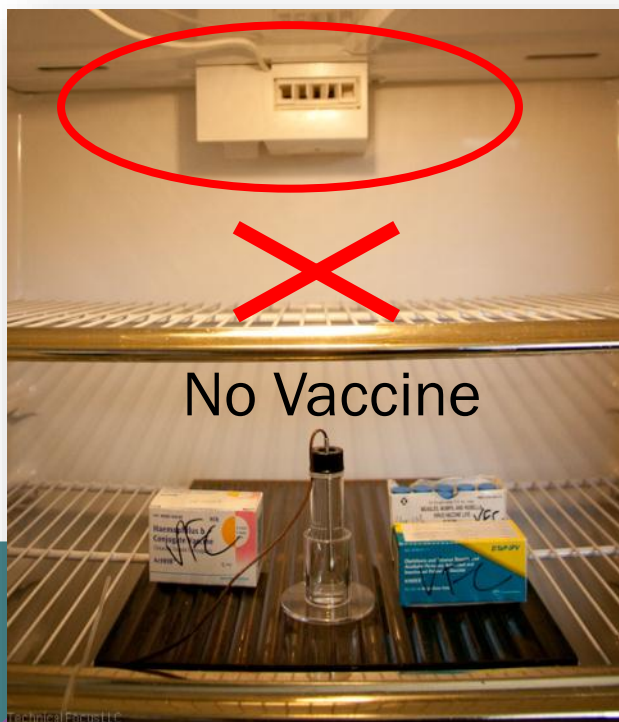
DATA LOGGER – OUT OF THE BOX

(SECTION 5 *DATA LOGGER INSTRUCTION MANUAL*

Data Loggers come already setup (except backups), but things happen in transit:

- **PS** - If the display is flashing PS, it is set-up and ready to go. Equilibrate probe, attach probe wire, push button to start recording.

DATA LOGGER – SETUP/RESET

(SECTION 5 *DATA LOGGER INSTRUCTION MANUAL*)

When do you have to Setup/Reset?
- Three dashes
- Using backup data logger for the first time.
- After each data download

DATA LOGGER – SETUP/RESET
(SECTION 5 *DATA LOGGER INSTRUCTION MANUAL*

Already named. Please DO NOT rename without contacting the Immunization Program.

Type 2

5 mins (3.5 months)

Next...

DATA LOGGER – SETUP/RESET
(**SECTION 5** *DATA LOGGER INSTRUCTION MANUAL*
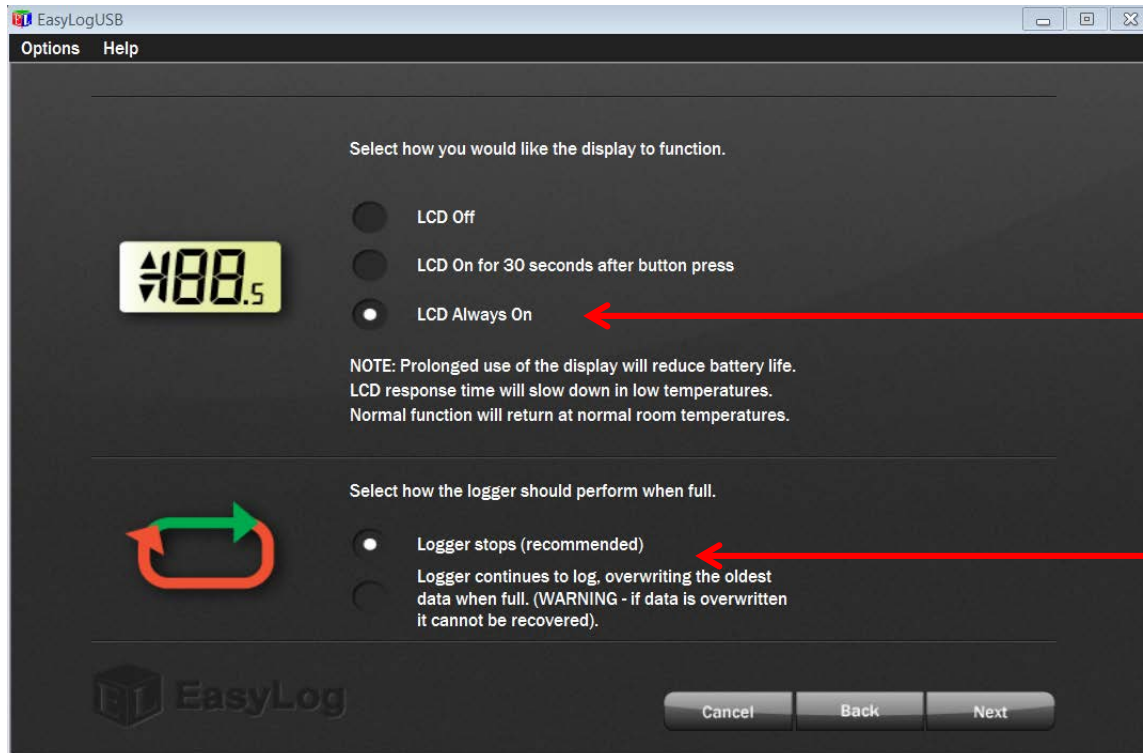
LCD Always On

Logger stops

Next…

DATA LOGGER – SETUP/RESET
(SECTION 5 *DATA LOGGER INSTRUCTION MANUAL*)

Temperature Alarm Thresholds

Or...

DATA LOGGER – SETUP/RESET

(SECTION 5 *DATA LOGGER INSTRUCTION MANUAL*)

Temperature Alarm Thresholds

Next...

DATA LOGGER – SETUP/RESET
(SECTION 5 *DATA LOGGER INSTRUCTION MANUAL*)

Alarm Delay

Or...

DATA LOGGER – SETUP/RESET
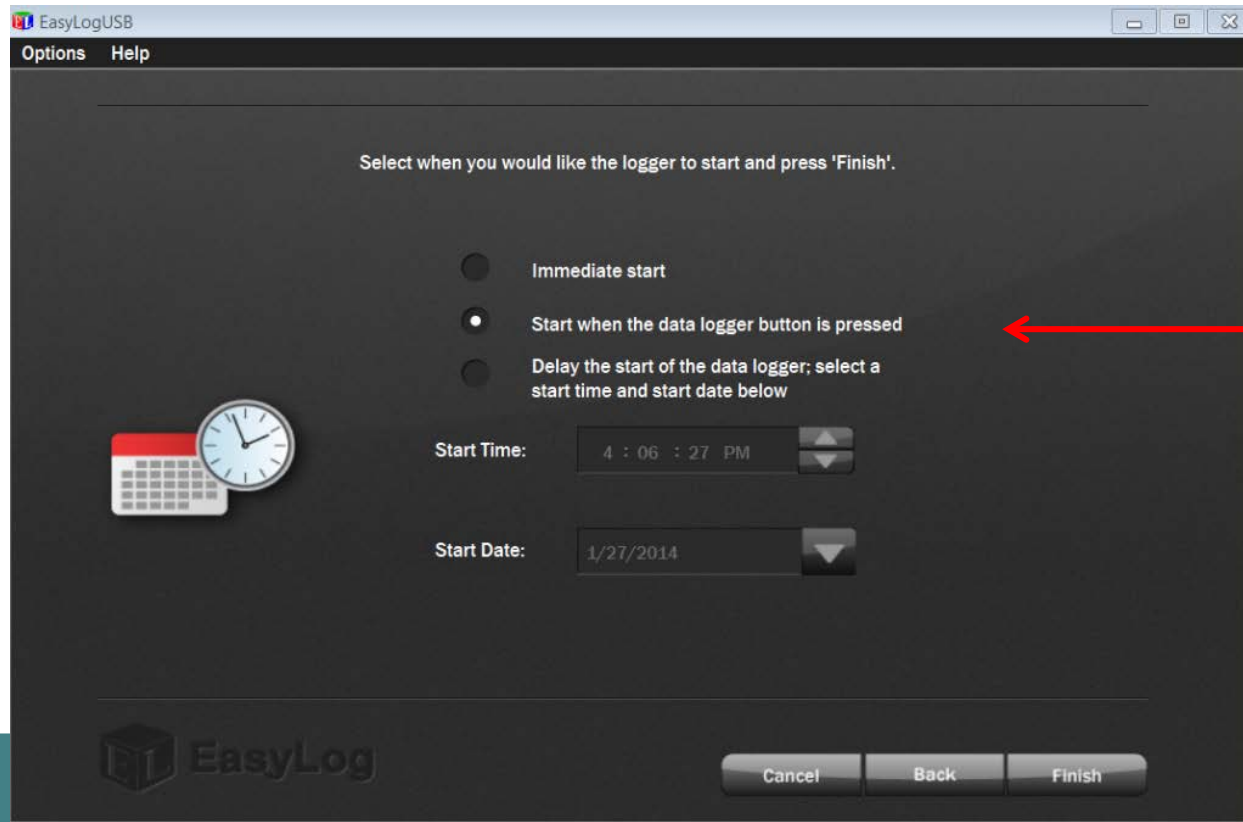**(SECTION 5 *DATA LOGGER INSTRUCTION MANUAL*)**

Alarm Delay

Next...

DATA LOGGER – SETUP/RESET
(SECTION 5 *DATA LOGGER INSTRUCTION MANUAL*)
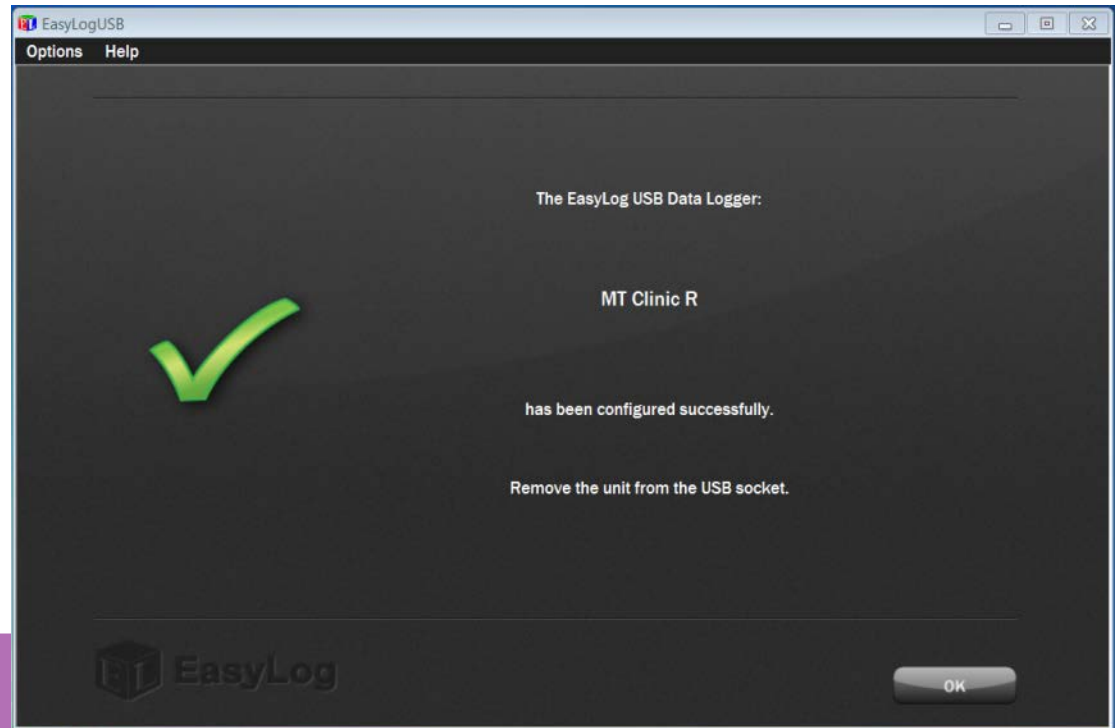

Push-Button Start

Finish…

DATA LOGGER – SETUP/RESET
(SECTION 5 *DATA LOGGER INSTRUCTION MANUAL*)

Remove Data Logger from USB:

```
P5
```

Data logger is set for "Push Start."

DON'T PUSH YET!!!

OK

DATA LOGGER – SETUP/RESET
(SECTION 5 *DATA LOGGER INSTRUCTION MANUAL*)

1. Place the data logger in its cradle
2. Attach the probe wire
3. <u>THEN</u> push the start button.

| LOG | >>> | 39F |

| - - - | >>> | Data logger is not set. Start over in Section 5. |

| Prob/2 | >>> | Probe is not attached, is loose, or there is a short in the wire. Firmly attach probe. |

DATA LOGGERS – TWICE DAILY READING

(Section 6 Data *Logger Instruction Manual*):

Morning AM:

No Press: Current temperature (X)

Press #1: Maximum recorded temperature (▲) since last reset (M)

Press #2: Minimum recorded temperature (▼) since last reset (M)

Press #3 and Hold: CLr ▲ ▼ appears after 3–5 seconds. Resets min/max temperatures.

Check Light: Is it green? (Y or N)

Evening PM:

No Press: Current temperature (X)

Check Light: Is it green? (Y or N)

Data Logger Display

Paper Temperature Log

- •Red lights (other than triple flash "probe connection errors") <u>ALWAYS</u> mean out-of-range temperatures. <u>RESPOND and INVESTIGATE</u>!!!

DATA LOGGERS

Twice Daily Readings

   (Section 8 *Data Logger Instruction Manual*)

DATA LOGGERS

Out-of-Range Response – How?

(Section 8 *Data Logger Instruction Manual*):

Instructions are on:
- Paper temperature logs
- Best Practices Posters
- Vaccine Incident Report
- VFC Provider Handbook.

Out-of-Range Response:
1. Quarantine the vaccine.
2. Label DO NOT USE
3. Store under appropriate temperature, if possible or move to emergency storage location.
4. Download data logger data (reset and reinstall data logger, if applicable)
5. Submit an online Vaccine Incident Report
6. Wait for our reply.

DATA LOGGERS

Out-of-Range Response – When?

(Section 8 *Data Logger Instruction Manual*)

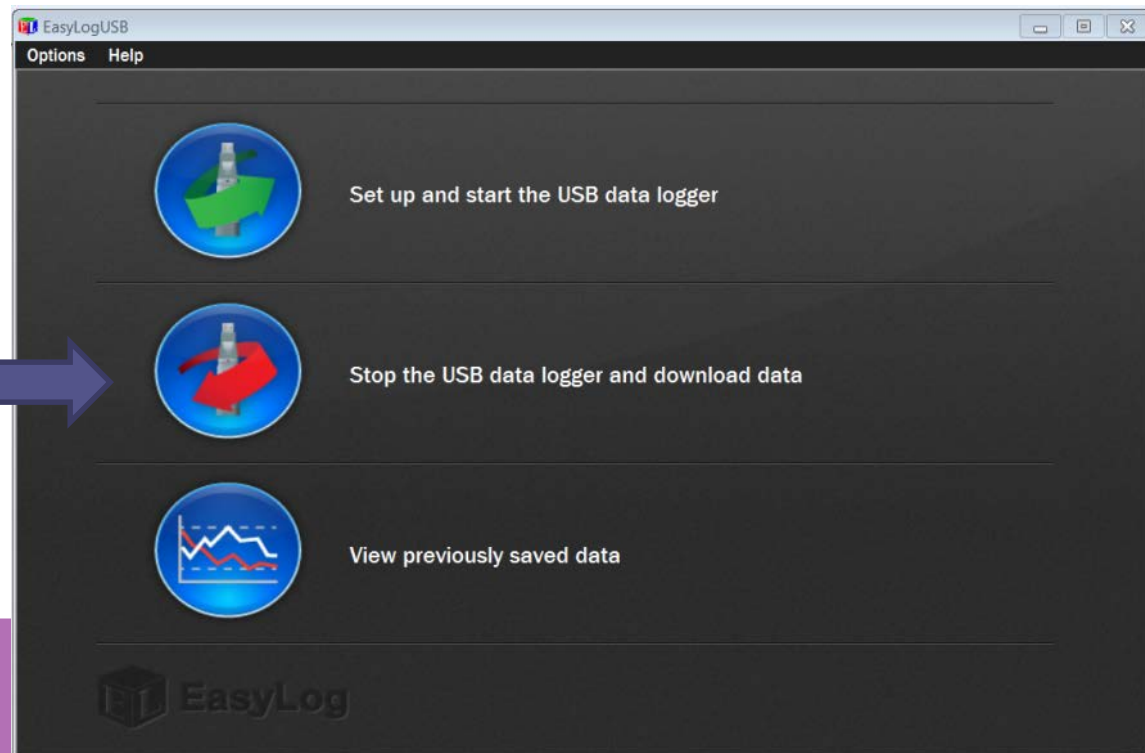

Respond immediately if:

Light is **RED**

MIN/MAX, or Current temperature is in the grey area.

(One exception!)

DATA LOGGERS

Downloading and Reviewing Data
   (Section 10 *Data Logger Instruction Manual*)
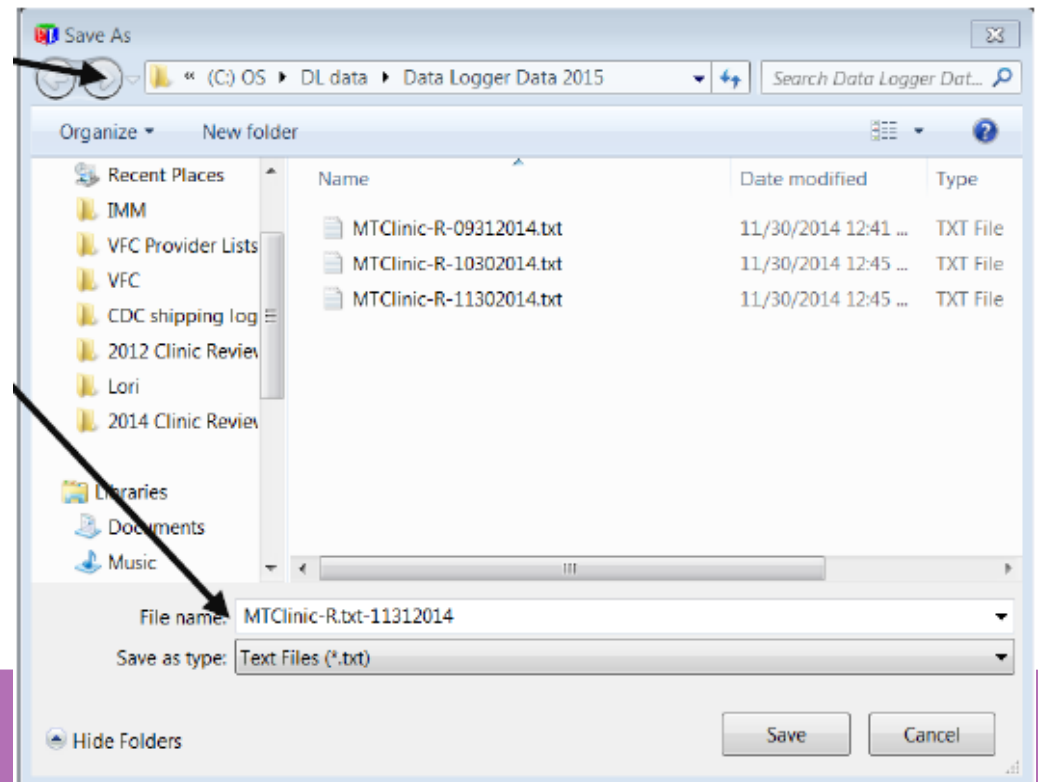

"Yes" on pop-up. Then "OK."

DATA LOGGERS

Downloading and Reviewing Data
   (Section 10 *Data Logger Instruction Manual*):

- <u>Add date </u>to file name to make it unique.

- <u>Save file</u>:
  - Well-labeled location
  - Shared location (if possible)
  - Accessible by anyone involved in data logger management
  - Once designated, EasyLog always uses that location until changed.

DATA LOGGERS

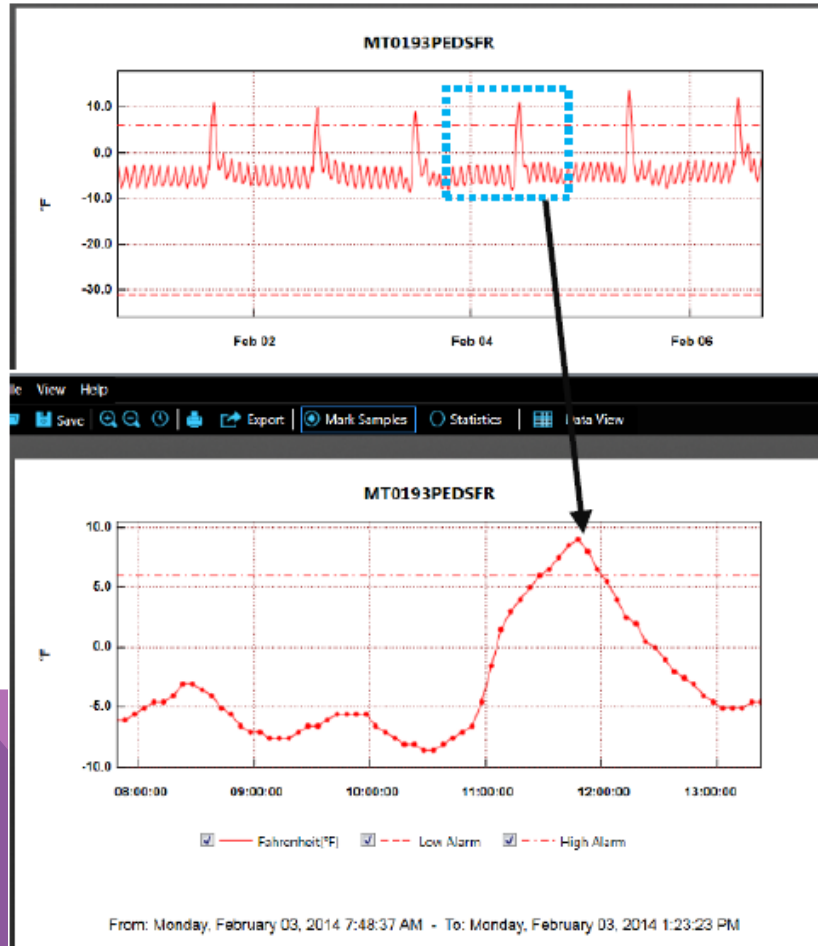**Downloading and Reviewing Data**

(Section 10 *Data Logger Instruction Manual*)

DATA LOGGERS

Downloading and Reviewing Data
(Section 10 *Data Logger Instruction Manual*)

+ Magnifying Glass
    Zoom In
- Magnifying Glass
    Zoom Out

Mark Samples

DATA LOGGERS

Downloading and Reviewing Data
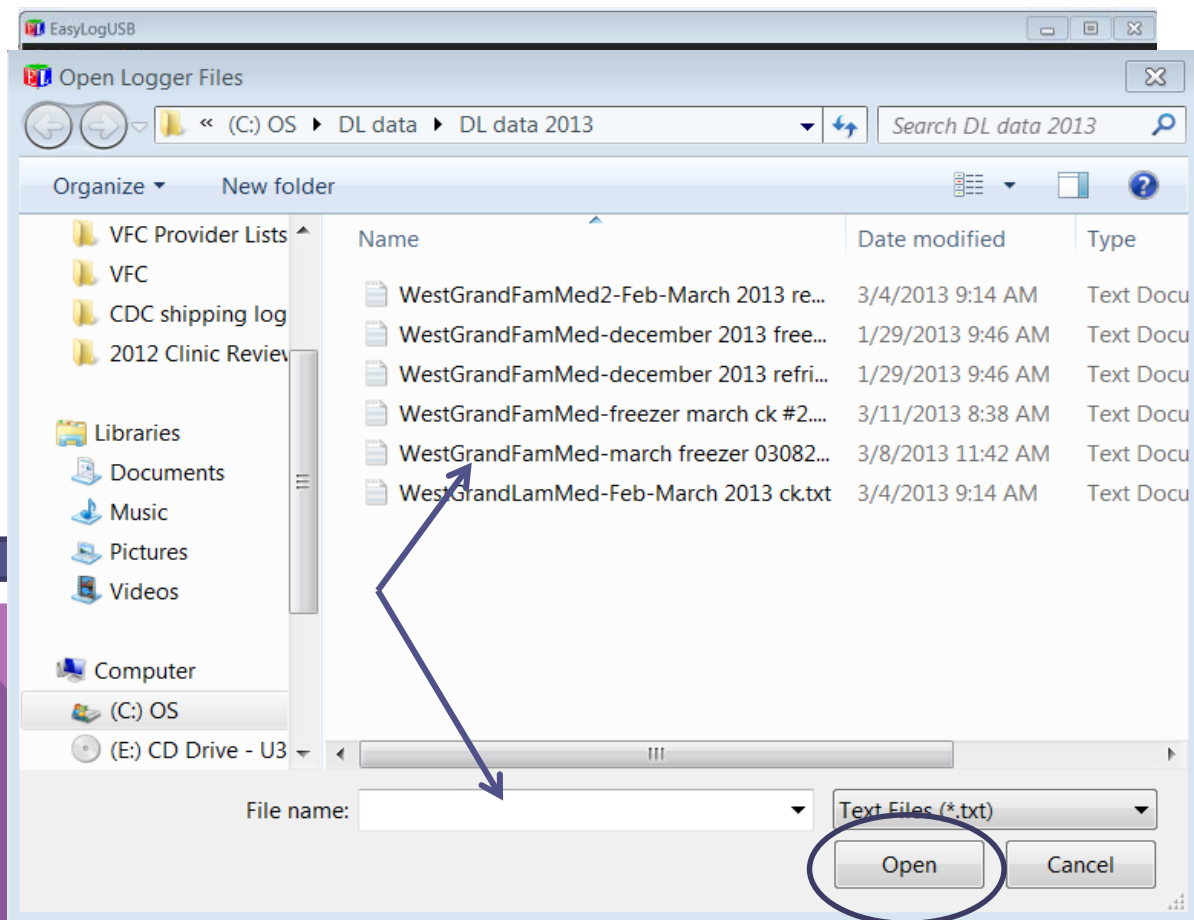   (Section 10 Data Logger Instruction Manual):

Statistics

Data View

DATA LOGGERS

Downloading and Reviewing Data

(Section 8 *Data Logger Instruction Manual*)

At least once per month or whenever there is an issue that needs investigating.

DATA LOGGERS

Resetting Data Logger
(Section 5 Data Logger Instruction Manual):

After download,
You must RESET the data logger.
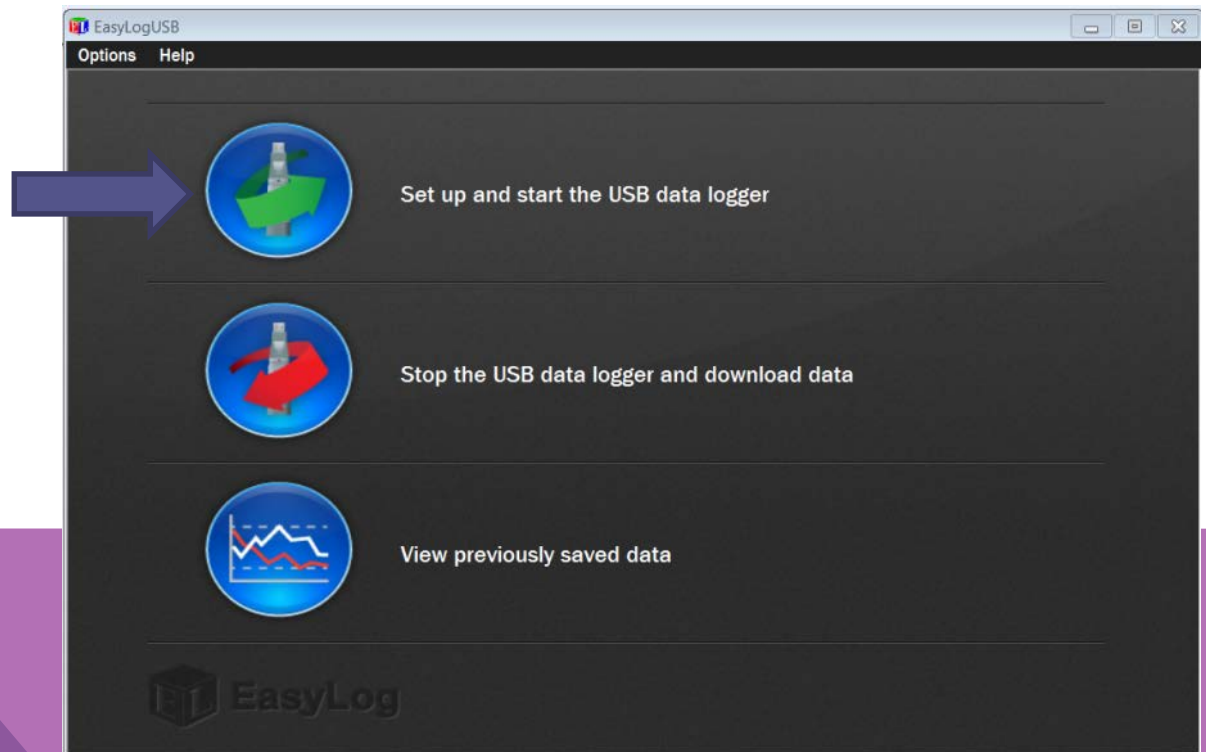
DATA LOGGERS

Sending Data to the Immunization Program
(Section 13 Data Logger Instruction Manual)

Submit ONLINE Vaccine Incident Report
Upload data file (.txt)

"MTClinic R-12162014.txt"

PLEASE DO NOT:
- Export from EasyLog software
- Print and fax graph
- Convert graph to pdf

Upload data logger file (if applicable):

Browse...

Submit

DATA LOGGERS

Automatic Defrost or "Frost-Free" Freezers
  (Section 8, Data Logger Instruction Manual)

What does "Automatic Defrost" Mean?

Roughly once every 24 hours, the freezer warms up for about an hour.
This prevents ice from accumulating on the inside of the chamber.
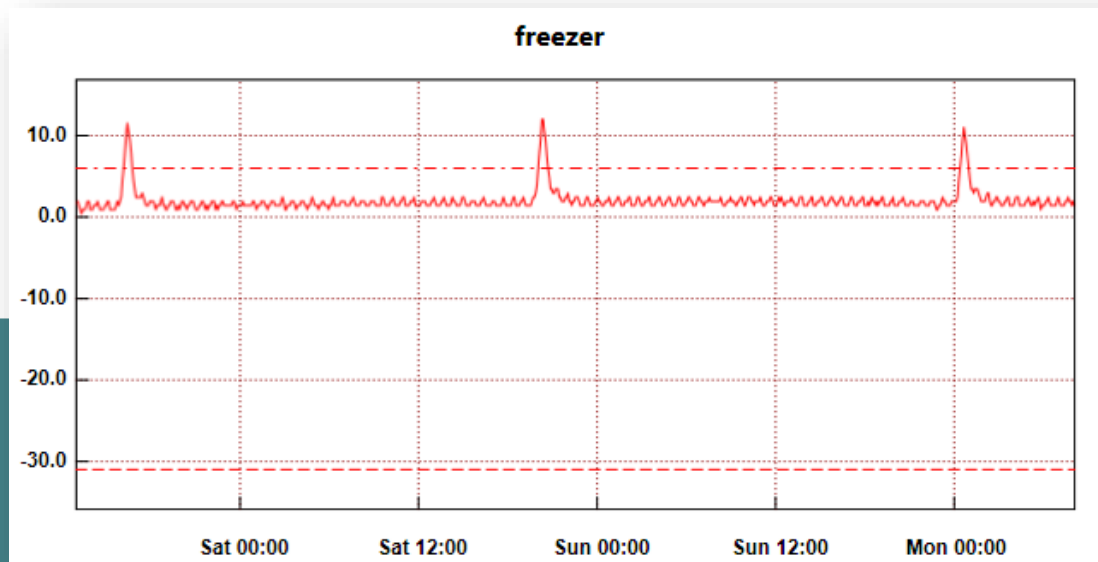
Is the OK?
Yes within certain limits.

- ≤ One hour or less
- ≤ 4 times per day
- ≤ 14°F.

Won't this trigger RED LIGHTS???

DATA LOGGERS

Freezer Defrost Cycles – Alarm Delay
  (Section 8 Data Logger Instruction Manual):

DATA LOGGERS

Freezer Defrost Cycles
     (Section 5, page 6 Data Logger Instruction Manual):

If you have an automatic defrost freezer:
        Max temperature will always be out-of-range (consistently)
        OK, if no RED light
        Respond immediately to RED light.

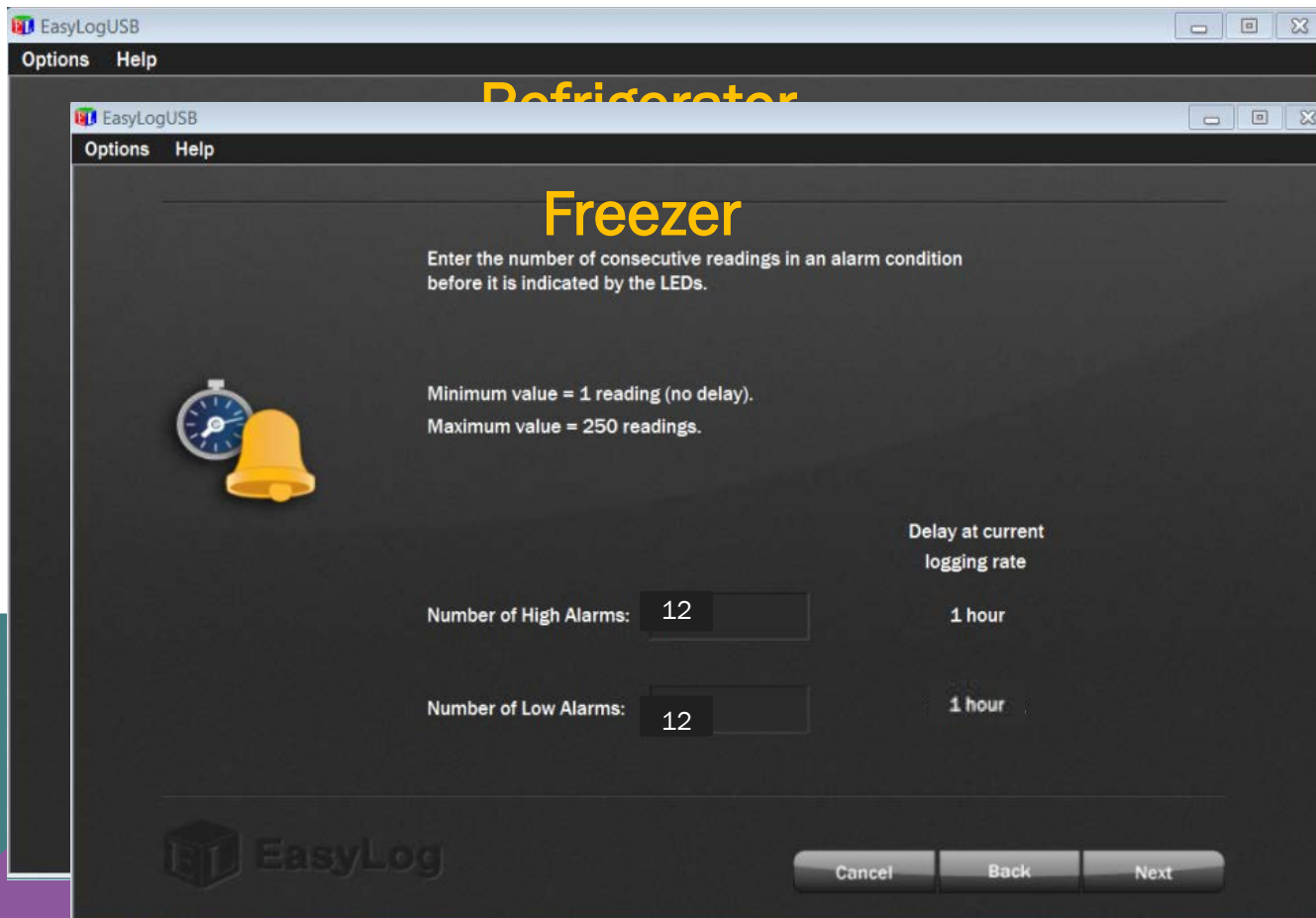| Day of Month | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | | 9 | | 10 | | 11 | | 12 | | 13 | | 14 | | 15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | am | pm | am | pm | am | pm | am | pm | am | pm | am | pm | am | pm | am | pm | am | pm | am | pm | am | pm | am | pm | am | pm | am | pm | am | pm |
| Time of Day | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Staff Initials | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LED Green? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

RED-Respond

High Max - OK

DO NOT USE vaccine that has been stored at these temperatures (shaded grey). See instructions at top of page.

DATA LOGGERS BASICS - RECAP

What you need:
- Proper storage units
- Data loggers
- Paper temperature logs
- Link to Vaccine Incident Report
- Trained, competent staff

Day-to-Day Management:
- <u>AM</u> – Check LED status, log min, max, and current temperatures, reset min/max
- <u>PM</u> – Check LED status, log current temperature
- Respond immediately to RED lights and out-of-range temperatures.

Get set up:
- Load vaccine properly
- Install, secure, and equilibrate probe vial
- Set-up data logger
- Attach wire, push button.

Monthly:
- Download, review, and archive data
- Add date for unique file names
- There should be no surprises.

42

DATA LOGGERS
PROBE CONNECTION ERRORS - SYMPTOMS
(SECTION 7 DATA LOGGER INSTRUCTION MANUAL)

During Reset: ⦿ ➕ | Prob/2 |

During Recording: ⦿ ➕ | | or | Prob/2 |

(Blank – No Display)   (On button-push)
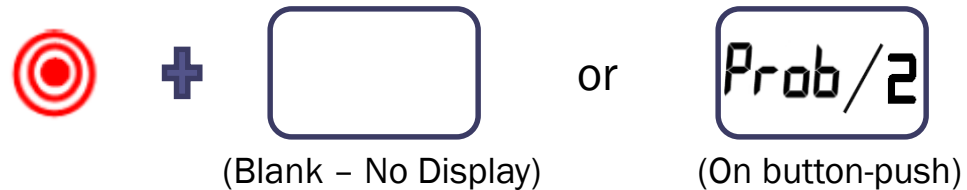
On Graph:
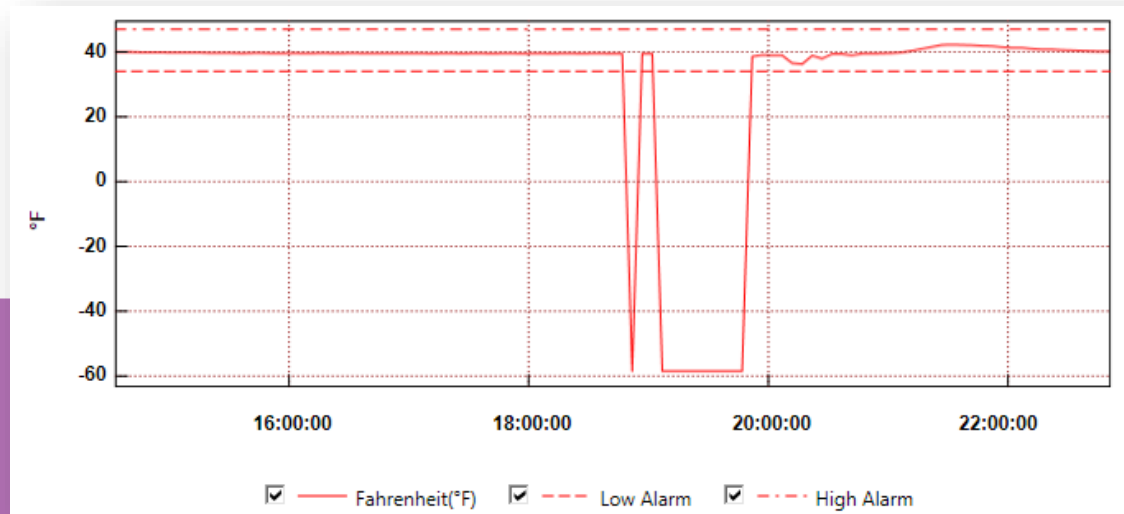
DATA LOGGERS

PROBE CONNECTION ERRORS - DEFINITION
(SECTION 7 DATA LOGGER INSTRUCTION MANUAL)

Probe errors occur when the data logger does not detect a probe attached.

Explanation:
1. No probe attached
2. Probe is loose, or
3. Short in the wire.

Solution
- **1 and 2 - Connect the probe!** Error will correct itself with next 5 minute reading.
- **3 – Replacement** - If the probe is firmly connected and still getting errors OR if getting probe errors in the middle of the night when no one is around, then there is a short in the wire. We will replace the data logger.

Prevention
- Handle the wire gently and by the plug, not the wire.

44

DATA LOGGERS
BROKEN TABS

Symptom
Plastic loop that holds silver tab is broken and two pieces of data logger will not stay together.

Solution - Replacement
We will send you a new data logger

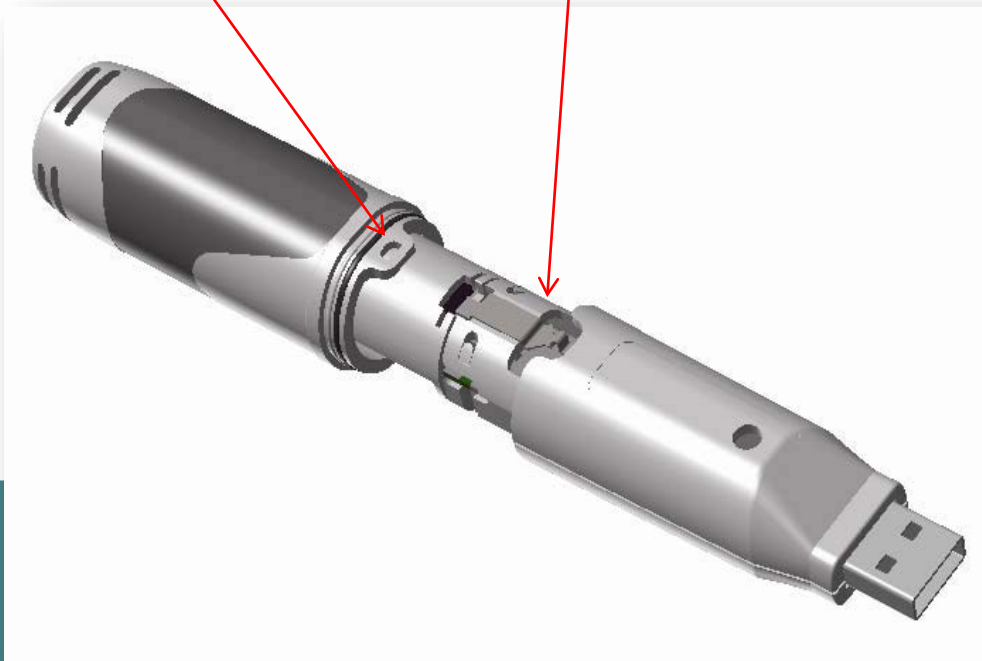Prevention – Do not push the acrylic cap on all the way.

DATA LOGGERS
DATA LOGGER NOT RECOGNIZED

If you get this error message:

⚠️ No EasyLog USB Data Logger found, is the Data Logger:
a) Plugged in?
b) Battery OK?
c) USB driver installed?

And your data logger has never been plugged in before:

- Try a different USB port
- Or reinstall the software and driver.

If your data logger has been plugged in before with no error:

- Change the battery (see Section 15).

DATA LOGGERS
LOW/DEAD BATTERY

Unfortunately the VFC 5000TP does not have an obvious low battery indicator.

Low/Dead Battery Indicator

⚠ No EasyLog USB Data Logger found, is the Data Logger:
a) Plugged in?
b) Battery OK?
c) USB driver installed?

➢ LED is flashing every 20 seconds instead of every 10 seconds.

➢ <u>Absolutely NO</u> LED or display

- Red lights are not low battery indicators!
- Other than triple flash "probe connection errors," red lights <u>ALWAYS</u> mean out-of-range temperatures. <u>RESPOND and INVESTIGATE</u>!!!

47

DATA LOGGERS BASICS

Resources

Montana VFC Program:

http://www.dphhs.mt.gov/publichealth/immunization/vaccinesforchildren.shtml

VFC Provider Handbook
Data Logger Instruction Manual
EasyLog Software Download
Paper Temperature Logs
Link to Vaccine Incident Report

CDC Vaccine Storage and Handling Toolkit:
http://www.cdc.gov/vaccines/recs/storage/toolkit/

48

Katie Grady-Selby
VFC Quality Specialist
444-1613
kgrady@mt.gov

Lori Hutchinson
Vaccine Manager
444-0277
lhutchinson@mt.gov

MT
VFC
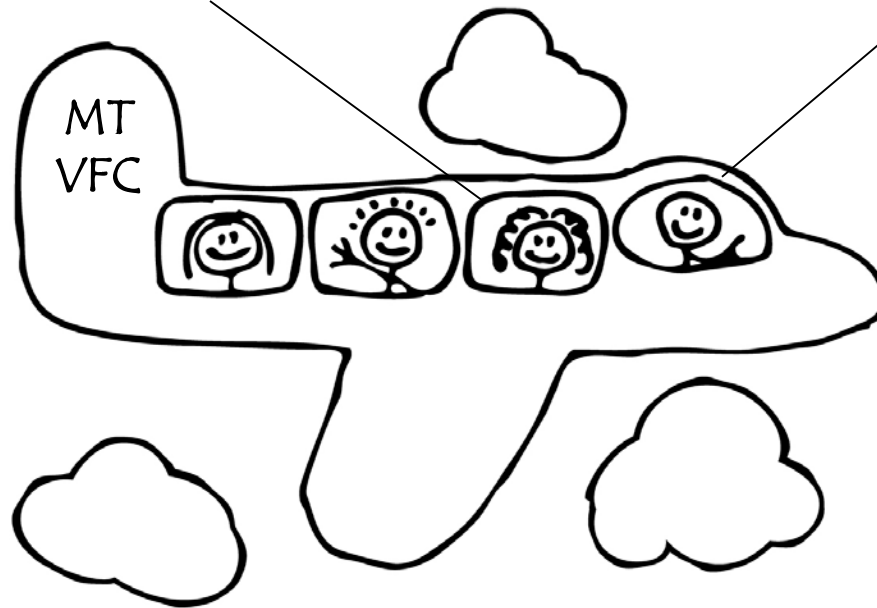
Questions?

Montana Immunization
Program
444-5580
hhsiz@mt.gov

49